CLAIMS

What is claimed is:

1. A method comprising:

receiving a data packet from a source;

determining whether a session identity exists for a communication session with the source;

transmitting the data packet to a destination if no session identity exists;

receiving the session identity from the destination; and

transmitting subsequent data packets received from the source along with the session identity to the destination.

2. The method of claim 1 wherein determining whether a session identity exists for a communication session with the source comprises:

obtaining address information from the data packet; and

searching a table using the address information for the session identity.

3. The method of claim 2 wherein searching a table using the address information for the session identity comprises:

using the address information in a hash function to obtain a hash value; and

using the hash value to find the session identity.

4. The method of claim 1 wherein transmitting the data packet to a destination if no session identity exists comprises:

selecting a particular destination;

adding a header to the received data packet; and

transmitting the header along with the received data packet to the destination.

5. The method of claim 4 wherein adding a header to the received data packet comprises:

including at least one of a flow message type field, a flow option field, a source port identity field, a destination identity field and a session identity field in the header of the received data packet.

6. The method of claim 1 further comprising:

removing a header prior to transmitting data packets received from the destination to the source; and

using information in the header to transmit data packets received from the destination to the source.

7. The method of claim 6 wherein the information in the header comprises the source port identity.

8. The method of claim 1 wherein transmitting subsequent data packets received from the source along with the session identity to the destination comprises:

adding a header including at least one of a flow message type field, a flow option field, a source port identity field, a destination identity field, and a session identity field; and not transmitting at least part of address information in the received subsequent data packets to the destination.

9. A method comprising:

receiving a data packet from a source through a network node;

determining whether a session identity exists for a communication session with the source;

generating a session identity if no session identity exists; and

transmitting the session identity to the network node.

10. The method of claim 9 wherein determining whether a session identity exists for a communication session with the source comprises:

obtaining the session identity from the data packet if one is included in the data packet;

obtaining address information of the network node; and

transmitting data to the network node using the address information.

11. The method of claim 10 wherein obtaining address information of the network node using the session identity comprises using the session identity as a pointer to the network node's address information.

12. The method of claim 10 wherein transmitting data to the network node using the address information comprises not transmitting at least part of the source's address information in the received data packet.

13. An article of manufacture comprising:

a machine-accessible medium including instructions that, when executed by a machine, causes the machine to perform operations comprising:

receiving a data packet from a source;

determining whether a session identity exists for a communication session with the source;

transmitting the data packet to a destination if no session identity exists;

receiving the session identity from the destination; and

transmitting subsequent data packets received from the source along with the session identity to the destination.

14. An article of manufacture as in claim 13 wherein instructions for determining whether a session identity exists for a communication session with the source comprises further instructions for:

obtaining address information from the data packet; and

searching a table using the address information for the session identity.

15. An article of manufacture as in claim 14 wherein instructions for searching a table using the address information for the session identity comprises further instructions for

using the address information in a hash function to obtain a hash value; and

using the hash value to find the session identity.

16. An article of manufacture as in claim 13 wherein instructions for transmitting the data packet to a destination if no session identity exists comprises further instructions for:

selecting a particular destination;

adding a header to the received data packet; and

transmitting the header along with the received data packet to the destination.

17. An article of manufacture as in claim 16 wherein instructions for adding a header to the received data packet comprises further instructions for:

including at least one of a flow message type field, a flow option field, a source port identity field, a destination identity field and a session identity field in the header of the received data packet.

18. An article of manufacture as in claim 13 comprising further instructions for removing a header prior to transmitting data packets received from the destination to the source; and

using information in the header to transmit data packets received from the destination to the source.

19. An article of manufacture as in claim 18 wherein instructions for using information in the header to transmit data packets received from the destination to the

source comprises instructions for using the source port identity to transmit data packets received from the destination to the source.

20 An article of manufacture as in claim 13 wherein instructions for transmitting subsequent data packets received from the source along with the session identity to the destination comprises further instructions for adding a header including at least one of a flow message type field, a flow option field, a source port identity field, a destination identity field, and a session identity field; and not transmitting at least part of address information in the received subsequent data packets to the destination.

21. An article of manufacture comprising:

a machine-accessible medium including instructions that, when executed by a machine, causes the machine to perform operations comprising:

receiving a data packet from a source through a network node;

determining whether a session identity exists for a communication session with the source;

generating a session identity if no session identity exists; and

transmitting the session identity to the network node.

22. An article of manufacture as in claim 21 wherein determining whether a session identity exists for a communication session with the source comprises further instructions for:

obtaining the session identity from the data packet if one is included in the data packet;

obtaining address information of the network node; and

transmitting data to the network node using the address information.

23. An article of manufacture as in claim 22 wherein obtaining address information of the network node using the session identity comprises further instructions for using the session identity as a pointer to the network node's address information.

24. An article of manufacture as in claim 21 wherein instructions for transmitting data to the network node using the address information comprises further instructions for not transmitting at least part of the source's address information in the received data packet.

25. A computer system comprising:

a bus;

a data storage device coupled to said bus; and

a processor coupled to said data storage device, said processor operable to receive instructions which, when executed by the processor, cause the processor to perform a method comprising

receiving a data packet from a source;

determining whether a session identity exists for a communication session with the source;

transmitting the data packet to a destination if no session identity exists;

receiving the session identity from the destination; and

transmitting subsequent data packets received from the source along with the session identity to the destination.

26. A computer system as in claim 25 wherein determining whether a session identity exists for a communication session with the source comprises:

obtaining address information from the data packet; and

searching a table using the address information for the session identity.

27. A computer system as in claim 26 wherein searching a table using the address information for the session identity comprises:

using the address information in a hash function to obtain a hash value; and

using the hash value to find the session identity.

28. A computer system as in claim 25 wherein transmitting the data packet to a destination if no session identity exists comprises:

selecting a particular destination;

adding a header to the received data packet; and

transmitting the header along with the received data packet to the destination.

29. A computer system as in claim 28 wherein adding a header to the received data packet comprises:

including at least one of a flow message type field, a flow option field, a source port identity field, a destination identity field and a session identity field in the header of the received data packet.

30. A computer system as in claim 25 further comprising:

removing a header prior to transmitting data packets received from the destination to the source; and

using information in the header to transmit data packets received from the destination to the source.

31. A computer system as in claim 30 wherein the information in the header comprises the source port identity.

32. A computer system as in claim 25 wherein transmitting subsequent data packets received from the source along with the session identity to the destination comprises adding a header including at least one of a flow message type field, a flow option field, a source port identity field, a destination identity field, and a session identity field; and not transmitting at least part of address information in the received subsequent data packets to the destination.

33. A computer system comprising:

a bus;

a data storage device coupled to said bus; and

a processor coupled to said data storage device, said processor operable to receive instructions which, when executed by the processor, cause the processor to perform a method comprising receiving a data packet from a source through a network node;

determining whether a session identity exists for a communication session with the source;

generating a session identity if no session identity exists; and

transmitting the session identity to the network node.

34. A computer system as in claim 33 wherein determining whether a session identity exists for a communication session with the source comprises:

obtaining the session identity from the data packet if one is included in the data packet;

obtaining address information of the network node using the session identity; and

transmitting data to the network node using the address information.

35. A computer system as in claim 34 wherein obtaining address information of the network node using the session identity comprises using the session identity as a pointer to the network node's address information.

36. A computer system as in claim 34 wherein transmitting data to the network node using the address information comprises not transmitting at least part of the source's address information in the received data packet.

37. A method comprising:

receiving a data packet from a source with a session identity;

storing the session identity if needed;

removing the session identity from the data packet; and

transmitting the data packet to a destination.

38. A method as in claim 37 wherein receiving a data packet from a source with a session identity comprises receiving the data packet with the session identity encapsulated in a header.

39. A method as in claim 37 wherein storing the session identity comprises storing the session identity in a forwarding table.

40. An article of manufacture comprising:

a machine-accessible medium including instructions that, when executed by a machine, causes the machine to perform operations comprising:

receiving a data packet from a source with a session identity;

storing the session identity if needed;

removing the session identity from the data packet; and

transmitting the data packet to a destination.

41. An article of manufacture as in claim 40 wherein said instructions for receiving a data packet with a session identity comprises further instructions for receiving the data packet with the session identity encapsulated in a header.

42. An article of manufacture as in claim 40 wherein said instructions for storing the session identity comprises further instructions for storing the session identity in a forwarding table.